

CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

This Document contains information affecting the National Defense of the United States, within the meaning of Title 18, Sections 793 and 794, of the U.S. Code, as amended. Its transmission or revelation of its contents to or receipt by an unauthorized person is prohibited by law. The reproduction of this form is prohibited.

SECRET
SECURITY INFORMATION

25X1

COUNTRY	USSR	REPORT	
SUBJECT	Information on Soviet Science and Industry	DATE DISTR.	13 May 1953
		NO. OF PAGES	9
DATE OF INFO.		REQUIREMENT NO.	RD
PLACE ACQUIRED		REFERENCES	25X1

THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
THE APPRAISAL OF CONTENT IS TENTATIVE.
(FOR KEY SEE REVERSE)

25X1

Additional Comments on Organization of Ministry of Communications Equipment Industry

1. Prior to the middle of 1947 the Ministry of Communications Equipment Industry was subordinate to the Radar Committee and received most of its projects or assignments from that committee. [redacted] note: [redacted] probably did not mean here the Radar Committee itself but an industrial trusteeship or control group supervised by Malenkov which [redacted] was responsible until the middle of 1947 for the supervision of the ministry in question and other ministries related to the aircraft industry. [redacted] the Radar Committee was a subordinate element of this industrial trusteeship. [redacted]

25X1

25X1

25X1

SECRET

STATE	#x	ARMY	#x	NAVY	#x	AIR	#x	FBI		AEC		OSI/P&E	Ev	FBI/SA	Ev	x
-------	----	------	----	------	----	-----	----	-----	--	-----	--	---------	----	--------	----	---

(Note: Washington Distribution Indicated By "X"; Field Distribution By "#".)

25X1

SECRET

-2-

2. [redacted] control by the Council of Ministers is limited to the establishment and verification of total production figures. That is, the State Planning Commission probably draws up broad production plans and the individual ministry develops within this framework its individual plan, which is submitted to the Council of Ministers for approval. In all likelihood, the ministry is responsible for its own operation and fulfills specific production orders drawn up by itself or received from other ministries.

3. The Ministry of Communications Equipment Industry consisted of five functional chief directorates. [redacted]

25X1

There was no intermediate body or agency between the institute and its controlling chief directorate. Incidentally, the Radar Committee mentioned earlier is now Committee 3 of the Ministry of Communications Equipment Industry.

4. Most but not all the directors of chief directorates held the title of deputy minister. These directors were mainly political or administrative personnel and were seldom heard of in connection with day-to-day production or research problems. As was true in all chief directorates, the Chief Engineer of the Chief Directorate for Vacuum Tubes was its technical director. Most of the institute's business with the ministry was conducted through the chief engineer, as he was personally held responsible for the fulfillment of production plans by the enterprises and institutes under his supervision. The chief engineer frequently appeared personally at Institute 160.
5. The Chief Directorate for Vacuum Tubes formed ad hoc committees from time to time to deal with special problems. There were two types of ad hoc committees. Special groups were frequently formed to deal with unusual technical problems like the development of transistors. These committees were made up of scientists recruited from research institutes. Secondly, boards of examiners (Pruefungskommissionen), consisting of specialists from other plants and institutes and representatives of consumer enterprises, were formed to check on the fulfillment of specifications for a particular project at the time of its completion.
6. There were several departments within Institute 160 which were under the administrative supervision of the institute director but which reported to ministries other than the Ministry of Communications Equipment Industry. That is, they were under the administrative control of the director but were functionally controlled by other ministries. These included the personnel section, the chief of which reported directly to the

SECRET

SECRET

-3-

MGB or MVD; the chief bookkeeper or business director of the institute, who reported to the Ministry of Finance; and the Technical Control Section (OTK), which was also directly controlled by an outside ministry.

Soviet Planning Procedures

7. There were two distinct types of production or operational plans at Institute 160. Plans guiding the work of scientists in the institute's scientific section were drawn up by the scientists themselves. Before the beginning of a production year, generally in November, the members of this section met and discussed possible projects for the coming year. They determined which projects were desirable and which could be fulfilled or not. They drew up the section's annual plan on the basis of these deliberations. This plan was submitted to the ministry and was approved with few or no alterations. [redacted] colleagues in the scientific section were very realistic. The primary object of these discussions was to discourage individuals from drawing up plans for their own work which were overly ambitious, which could not be fulfilled.
8. [redacted] Soviet authorities encouraged or would encourage simultaneous research on a given problem along competitive lines if their industrial capacity or the number of available scientists were large enough to allow such a decision. That is to say, one-sided research in the Soviet Union was determined by limited resources and not by an ideological consideration. Parallel research on a given problem was seldom feasible in the field of electronics because of these considerations.
9. The second type consisted of the usual production plans which were drawn up for the copying and production of vacuum tubes. These plans, issued by the ministry, established time schedules for the development, setting into production, and actual production of a given number of vacuum tubes. Bonuses were generally distributed for on-time fulfillment of each production stage.
10. The ministry did not simply dictate these plans in the form of directives to the institute. They were the result of careful consultation between the chief engineer of the chief directorate and his assistants, the agency placing the production order (usually military agencies), and representatives of the institute. Some contracts were discussed for months at a time between these three groups before a plan was finally drawn up for their execution.
11. [redacted] a group of engineers acted as assistants to the chief engineer of the chief directorate. [redacted] well educated men who knew the business of electronics and who were reasonable to work with. They were not Party functionaries and hence were more interested in getting a job done than in any subsidiary political considerations.

25X1

25X1

25X1

25X1

SECRET

SECRET

- 4 -

12. The control of plan fulfillment was mainly carried out by means of monthly and annual production reports which the institute was required to submit to the ministry. There was no pronounced tendency to falsify them, at least not the annual reports. Production progress was sometimes exaggerated in monthly reports in order to cover up for shortcomings. In addition, control commissions dispatched from the ministry occasionally checked on the fulfillment of plans.
13. Planning procedures and planned operations generally ran smoothly at Institute 160, particularly in the scientific section. This was the result of years of experience and mutual support on the part of Soviet engineers and administrators. In any planned operation, it is possible to swing to either optimistic or pessimistic extremes. It is possible for planners to overestimate their industrial capacity, thus bringing about a collapse in planned operations. It is just as easy to underestimate industrial capacity because of fear of failure. As a result, industrial capacity is not fully utilized. The Soviets, however, have learned through experience to avoid these extremes.
14. Bureaucratically speaking, the problem was greater with production plans, as the ministry played a far more important role in their determination. But, even here, these plans were sensible and did not place exaggerated demands on the capacity of the institute. And when a plan was not fulfilled, it was not regarded as catastrophic. For example, the production plant attached to Institute 160 was once required in its annual plan to reduce rejects by 20%. This was impossible and this aspect of the plan was not fulfilled. Nevertheless, the plant director was not only not rebuked but was later appointed chief engineer of the chief directorate. However, the reasonableness of such plans, the tolerance of such failures depended to a great degree on the personality of the chief directorate's chief engineer.

25X1

25X1

25X1

Comments on Soviet Dependence on Western Technology

15. With respect to education and industry, the striking parallel between Soviet and American organizational patterns, due to the high degree of imitation by Soviet authorities of American organizational techniques. For example, many Soviet engineers dismissed German criticism of their educational system with the statement that it had been adapted from the American educational system. I feel certain that if there are any points regarding the Soviet educational structure which remain unclear, one can safely assume that they conform to their American counterparts.
16. The Soviet press has recently been propagandizing with great fanfare innovations in industrial organization which evidently are of American origin. For example, the campaign to submit financial reports as soon as possible after the completion of a given production period is probably a result of adapting

25X1

SECRET

SECRET

-5-

American methods. [redacted]

[redacted] this practice was introduced by that firm quite some time ago.

17.

[redacted] the Soviet electronics industry is extremely dependent on information pertaining to discoveries and innovations of American electronics research institutes and plants. Soviet engineers who were allowed to study at American universities and industries during and after World War II were important sources of this information. [redacted]

25X1

[redacted] Soviet engineers were on special training assignments in the United States as late as 1949. They were required while in the United States to submit quarterly reports to some Soviet office in New York concerning technological developments which they had studied or observed.

25X1

18.

[redacted] the establishment in 1951 of a central office in Moscow responsible for the translation and abstracting of articles appearing in foreign technical journals [redacted]

25X1

25X1

19.

It is quite possible that the establishment of this office came about in the following way. Prior to its existence, each industrial ministry had been responsible for distributing foreign technical journals or abstracts of articles appearing in these journals to the institutes and enterprises under its control. [redacted] received at Institute 160 all significant American and British publications in the field of electronics. Suddenly this flow of publications ceased and these valuable journals were unobtainable for a period of three months or so. [redacted] this occurred in the spring of 1950.

25X1

25X1

20.

It is quite possible that the United States Government somehow made it more difficult for Soviet representatives there to obtain these publications or reduced the number of journals available to Soviet purchasers. Such a step might have forced the Soviet Government to centralize its distribution of this material and to rely more on abstracts than on the original publications. [redacted]

25X1

21.

As for the censorship of Western technical journals, most technical articles are so politically neutral that there is no need to censor them from this point of view. If any material has to be censored for security or political reasons, the Soviet Government most likely would not permit its publication in any form whatsoever. This apparently was the case with some American journals received at Institute 160. Entire sections of periodicals were occasionally cut out prior to their arrival at Fryazino.

SECRET

SECRET

-6-

25X1

Educational Institutions Training Electrical Engineers

22. Most of the engineers employed in the vacuum tube plant attached to Institute 160 were graduates of the Elektrotechnicheskiy Institut in Moscow. [redacted]

25X1

23. Unlike the plant engineers, most scientists and research engineers at Institute 160 were graduates of universities; above all, Moscow University. Electronics research specialists employed at Institute 160 included graduates of Moscow, Gorkiy, Kiev, and Kharkov universities, listed in the order of importance. Kharkov University, unlike the others, was combined with a research institute. Electronics specialists who were graduates of Minsk University were also employed at Institute 160. But the quality of instruction at this institution was evidently inferior as these specialists did not measure up to the standards of their colleagues. [redacted]

25X1

24. Apparently little or no research was carried out at Soviet universities and other higher educational institutions. [redacted] most if not all pure research is done at research institutes which are under the jurisdiction of the Academy of Sciences. Soviet educational and research institutions operate on the principle that it is best to separate teaching and scientific research. This same system, incidentally, is now being established in the GDR, contrary to German traditions. [redacted] a healthy development for Germany at least, as it certainly is not sensible to expect that good university professors are necessarily good research men, and vice versa.

25X1

25X1

Activities and Functions of the Academy of Sciences, USSR

25. The only contact between Institute 160 and research scientists of the Academy of Sciences occurred as the result of a directive supposedly issued by Stalin ordering a closer relationship between pure research activities and the needs of Soviet industry. [redacted]

25X1

[redacted] several research scientists from the Academy of Sciences asked members of Institute 160's scientific section to suggest research topics in the light of this directive. Contact was not renewed after this one-time inquiry. In general, research institutes of the Academy of Sciences engaged in pure research functioned independently of and had no contact with industrial research institutes.

SECRET

SECRET

-7-

25X1

26. Not all employees of the Academy of Sciences' research institutes were members of the Academy of Sciences. Perhaps only 10% of all scientists employed in these institutes were in this category. It was also true that members of the Academy of Sciences were assigned to positions other than Academy research institutes. [redacted] the employment of an Academy of Sciences member in a permanent capacity with an enterprise or industrial research institute was decided by the responsible ministry. 25X1
27. Although no Academy of Sciences members were employed at Institute 160, [redacted] it was a frequent practice to assign members of the Academy of Sciences as consultants to industrial institutes [redacted] This practice was the result of both financial and professional considerations. First, it was considered desirable to give varied professional experience to research scientists and, by a system of exchanges, to utilize their talents fully. University professors and Academy of Sciences members were frequently assigned as scientific consultants to industrial institutes. For example, a professor from Moscow University was employed one day each week as a scientific consultant at Institute 160. It was also a common practice to allow the best specialists at industrial institutes to teach on a part-time basis at higher educational institutes or to act as consultants to other industrial institutes. 25X1
28. There was also a financial reason for this practice. Before the currency reform, scientists and engineers were at a relative disadvantage, since they were paid during this period of inflation according to salaries fixed by the 1928 wage code. Workers, on the other hand, were aided somewhat during this inflation by the practice of assigning them low production norms. As a result many Academy of Sciences members and other research specialists sought to raise their incomes and were encouraged to do so by acting as consultants (perhaps one day per week) to institutes other than the ones which employed them. In this way, they received fat consultation fees in addition to their normal pay. 25X1
29. The method of nominating or selecting new members of the Academy of Sciences is not known. [redacted] Malenkov was responsible for Admiral Berg's appointment to the Academy of Sciences. He was honored by this appointment while head of the Radar Committee, at that time under the supervision of Malenkov. Berg, incidentally, was arrested during the 1936-38 purges and was in jail for 18 months from 1938 to 1939. So it is evidently possible to become a member of the Academy of Sciences even if the past political record of the person concerned is sciled. 25X1
30. Although it is hard to draw a distinct line between pure and applied research, pure research is far more concentrated in the Soviet Academy of Sciences' research institutes than in the case of similar organizations in Western Europe. As mentioned before, little or no research is carried out in Soviet higher educational institutions. Perhaps 90% of all pure research in the field of electronics was conducted in research institutes of the Academy

SECRET

SECRET

-8-

25X1

of Sciences, [] there is a physics section within the Academy of Sciences, USSR, which is responsible for research in electronics and related fields.

25X1

Soviet Wage Policies

31. [] at Institute 160 all wages and salaries in the Soviet Union are still classified according to the wage code of 1928. During the war-time and early postwar inflation in the Soviet Union, production norms of workers were simply lowered in order to give them some relief instead of changing the entire wage classification system. This policy avoided the disruption which would have resulted from such a far-reaching move but worked hardships on fixed salaried personnel. 25X1
32. This pre-currency reform policy was clearly pointed out [] with [] and the zamnachalnik of the scientific section. Both men took note of this policy of lowering norms and maintaining previously-established wage classifications during periods of inflation. They further stated that the question of changing the 1928 wage code, of introducing new wage classifications, was often discussed by Soviet authorities before the currency reform. This step was rejected as impracticable because of the disruptions which it would cause in the Soviet economy. 25X1
[] a zamnachalnik (assistant chief) was assigned to each section at Institute 160. These employees were Party and not technical personnel (some of them were incredibly stupid). It was their primary function to maintain and observe the political reliability of their sections. 25X1
33. After the currency reform of 1947 was carried out, production norms of workers were continuously increased and their effective wages were correspondingly decreased. Every person "in the know" in the Soviet Union recognized that it was a definite policy of the Soviet Government to increase norms in connection with price reductions. Workers, as a result, benefited relatively little by price reductions, while fixed salaried employees received maximum aid. As a concrete example, skilled workers who prior to 1947 easily fulfilled their production norms by 250% generally fulfilled their norms by but 110% in 1952. The average wages of skilled workers in the institute dropped from about 2,300 rubles in 1947 to 1,100 rubles in 1952.
34. This policy was no secret and was openly discussed, especially by workers, as they were most affected. It was obvious to all that norm increases occurred in connection with price reductions. When this occurred, workers sometimes commented that the increases in norms had more than offset the gains received by price reductions. There was no apparent ill-feeling toward salaried employees on the part of workers, as the former had suffered much before the 1947 currency reform.
35. Another shrewd aspect of Soviet economic policy was the combination of State loan drives and price reductions. Price reductions almost invariably occurred at the same time as

SECRET

SECRET

-9-

25X1

State loan drives. [redacted] this policy was dictated by a shortage of consumer goods. State loans brought about in effect a 10% reduction in wages, thus equalizing purchasing power with reduced prices. Reduced prices without a corresponding reduction in purchasing power would have brought about a shortage of consumer goods appearing on the market. By this policy the Soviet Government thus won a propaganda stroke abroad and maintained economic stability at home. This policy was apparent to every Soviet citizen and was openly discussed.

25X1

25X1

SECRET